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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,608	11/15/2001	Shinya Tsukizaki	100809-00090 (SCET 19.177	2920
26304	7590	05/14/2004	EXAMINER CUNNINGHAM, GREGORY F	
KATTEN MUCHIN ZAVIS ROSENMAN 575 MADISON AVENUE NEW YORK, NY 10022-2585			ART UNIT 2676	PAPER NUMBER 11
DATE MAILED: 05/14/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/002,608

Applicant(s)

TSUKIZAKI ET AL.

Examiner

Greg Cunningham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This action is responsive to communications of amendment received 2/24/2004.
2. The disposition of the claims is as follows: claims 1-7 are pending in the application. Claims 1, 3, 5 and 7 are independent claims. Independent claims 8 and 9 have been added.

### *Drawings*

3. In view of newly summated drawings, objection is withdrawn.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being disclosed by Falk, (US Patent 5,255,352).

A. Claim 1, "A method for rendering a texture onto a surface of an object model represented with a three-dimensional model [in abstract], comprising: dividing texture data into a plurality of texture lines each having a width of one dot and a length equal to the number of dots in one side of the texture [col. 4, ln. 52 – col. 5, ln. 24; (wherein s = one pixel width of x pixels or dots & t = line of y pixels or dots)]; supposing a stereoscopic object, based on each of said plurality of texture lines, by projecting [col. 8, lns. 31-34] the texture line in a light traveling direction from a

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virtual light source while possessing color information from an arrangement relationship between the texture line [col. 14, lns. 25-31 & lns. 55-59; col. 16, lns. 39-57], the object model and the virtual light source in a three-dimensional space; and defining an intersecting part between the stereoscopic object and the surface of the object model as a region for rendering the texture line, and rendering the stereoscopic object on the defined region [col. 10, lns. 15-31]" is disclosed [as detailed].

B. Claim 2, "A method for rendering a texture according to claim 1, wherein said texture lines are parallel to either side having a greater number of dots among a vertical side and a horizontal side of the texture [col. 5, lns. 1-3; col. 5, lns. 8-11]" is disclosed supra for claim 1 and [as detailed]. Wherein isoparametric lines correspond to parallel.

C. Per independent claims 3, 5 and 7, these are directed to an apparatus, storage medium and program, respectively, for performing the method of independent claim 1, and therefore are rejected to independent claim 1.

D. Per dependent claims 4 and 6, these are directed to an apparatus and storage medium, respectively, for performing the method of dependent claim 2, and therefore are rejected to dependent claim 2.

(Examiner's note: In claims 3 and 4, the adjective modifying apparatus "entertainment" lacks patentable weight.)

E. Per independent claims 8 and 9, these are directed to a broader method and apparatus, respectively, for performing the method and apparatus, respectively, of independent claims 1 and 3, respectively, and therefore are rejected to independent claims 1 and 3.

***Response to Arguments***

6. While it is true that the related art of Falk, (US Patent 5,255,352), does not recite, “rendering each two-dimensional pattern as a series of texture lines by means of applying the shadow volume method”; it is also true that claims 1-9 do not recite this either. Furthermore, claims 1-9 do not even mention “shadow volume”, “series of texture lines” or even the word “series”. However, Falk does disclose claims 1-9 as cited in claims.

For instance, claim 1, “A method for rendering a texture onto a surface of an object model represented with a three-dimensional model, comprising: dividing texture data into a plurality of texture lines each having a width of one dot and a length equal to the number of dots in one side of the texture [imagine a set of evenly spaced isoparametric lines in s defined over the surface and another group of evenly spaced isoparametric lines in t. The intersections of the s lines with the t lines form a regularly spaced grid of (s,t) points in the parameter space of the surface. Evaluating the surface at each of these (s,t) points gives us the 3-D (x,y,z) coordinates of the surface at each of these points. The more closely the (s,t) grid points are spaced, the more closely a polygonal mesh made from the resulting (x,y,z) vertices will approximate the surface in 3-D space.

The polygons resulting from the discretization of the surface are used by the flattening algorithm as detailed in the co-pending Wu application, as well as input to the texture mapping function.

As can be inferred here, the only requirement on a surface type is that a polygonal mesh that suitably approximates the surface may be generated to serve as input to the flattening and texture mapping processes. Parametric surfaces provide a well-defined way of creating this; (wherein s = one pixel width of x pixels or dots & t = line of y pixels or dots)]; supposing a stereoscopic

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object, based on each of said plurality of texture lines, by projecting [For every 3-D polygon in the mesh approximating the 3-D surface, there is a corresponding 2-D projection of that polygon contained within the flattened 2-D mesh.] the texture line in a light traveling direction from a virtual light source while possessing color information from an arrangement relationship between the texture line [(38)  $r, g, b$ : The color of the light falling on the 3-D surface at the point at the top of this edge. The light is computed based on the position, color, and intensity of the light sources along with the orientation of the 3-D surface at this point. This color is used to attenuate the (R,G,B) colors in the texture when they are mapped; (R,G,B) color values are obtained via a lighting computation based on the position, color, and intensity of light sources in the current scene along with the direction of the vector normal to the surface at the vertex; There are also a red, green, and blue interpolated color components (abbreviated RI,GI,BI) associated with the amount and color of light falling on this portion of the surface. These color values must attenuate 238 each other. The final red, green, and blue values of this pixel are determined by the following equations: ##EQU1## This results in the texture color being attenuated by the current light color falling on this point on the surface. The current color is then set to this computed color 240, and a point 242 at the 3-D (x,y,z) interpolated coordinate in 3-D space. Because this is a 3-D point, the algorithm can take advantage of hardware Z-buffer hidden surface elimination capability offered by the graphics display system.], the object model and the virtual light source in a three-dimensional space; and defining an intersecting part between the stereoscopic object and the surface of the object model as a region for rendering the texture line, and rendering the stereoscopic object on the defined region [The user may place two pattern pieces near each other and carefully position the pattern pieces relative to a feature in the texture,

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such as a stripe, so that when these two pieces are mapped in 3-D, the stripes on the two pattern pieces will line up or be placed in some other desired relative fashion. For purposes of the present invention, information must be supplied concerning the relative size of the image versus the relative size of the flattened pattern piece (a scale factor) relative X and Y offsets from a 'base' position (a translation), and a rotation, with an angle specifying the angular change from an 'unrotated' orientation. Other methods may be envisioned for allowing a user to position a texture for mapping on a 3-D surface. This method has particular application to industries that design objects incorporating textiles or upholstery.]” is disclosed as [detailed].

Independent claims 3, 5, 7 and 9, these are directed to an apparatus, storage medium, program and method, respectively, for performing the method of independent claim 1, and therefore are rejected to independent claim 1.

In the instance of claim 2, “A method for rendering a texture according to claim 1, wherein said texture lines are parallel to either side having a greater number of dots among a vertical side and a horizontal side of the texture [imagine a set of evenly spaced isoparametric lines in  $s$  defined over the surface and another group of evenly spaced isoparametric lines in  $t$ . The intersections of the  $s$  lines with the  $t$  lines form a regularly spaced grid of  $(s,t)$  points in the parameter space of the surface. Evaluating the surface at each of these  $(s,t)$  points gives us the 3-D  $(x,y,z)$  coordinates of the surface at each of these points. The more closely the  $(s,t)$  grid points are spaced, the more closely a polygonal mesh made from the resulting  $(x,y,z)$  vertices will approximate the surface in 3-D space.]” is disclosed supra for claim 1 and [as detailed]. Wherein isoparametric lines correspond to parallel.

Claims 3-9 are rejected based on rejection of claims 1 and 2, supra.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Responses***

8. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 872-9314 may be used for formal communications.

Please label "PROPOSED" or "DRAFT" for informal facsimile communications. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).



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*Inquiries*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Cunningham whose telephone number is (703) 308-6109.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

*J.F. Cunningham*

gfc

May 3, 2004

*Matthew C. Bella*

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